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NGC-259/22-0153

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CLAIM AMENDMENTS

1. (Original) A method of processing a signal with frequencies within a frequency band having a bandwidth B, the signal including a plurality of messages, each message having frequencies within a unique frequency band, where the frequency bands of the plurality of messages occupy the bandwidth B, and where messages with adjacent frequency bands may have different bandwidths, said method comprising:

receiving the signal;

separating the signal into groups of messages having frequency bands with the same bandwidth, all messages in any group occupy non-adjacent frequency bands;

combining the messages of each group;

applying each combined group of messages to a separate amplifier to amplify each combined group of messages; and

separating each amplified group of messages into separate messages.

2. (Original) A method as claimed in claim 1, further comprising transmitting each separated message to a respective receiving station.

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1 3. (Original) A method of communicating a plurality of messages from an
2 originating station, through a relaying station, to a plurality of receiving stations, said
3 method comprising transmitting the plurality of messages from the originating station to
4 the relaying station in a signal with frequencies within a frequency band having a
5 bandwidth B, with each message having frequencies within a unique frequency band,
6 where the frequency bands of the plurality of messages occupy the bandwidth B, and
7 where messages with adjacent frequency bands may have different bandwidths; and at
8 the relaying station:

9 separating the messages into groups of messages having the same
10 bandwidth, where all messages in any group occupy non-adjacent frequency bands;

11 combining the messages of each group;

12 applying each combined group of messages to a separate amplifier to
13 amplify each combined group of messages;

14 separating each amplified group of messages into separate messages;

15 and

16 transmitting each separated message to a respective receiving station.

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1 4. (Original) An article, comprising a storage medium having instructions
2 stored thereon, the instructions when executed processing a signal with frequencies
3 within a frequency band having a bandwidth B, the signal including a plurality of
4 messages, each message having frequencies within a unique frequency band, where
5 the frequency bands of the plurality of messages occupy the bandwidth B, and where
6 messages with adjacent frequency bands may have different bandwidths, the
7 instructions processing the signal by receiving the signal; separating the signal into
8 groups of messages having frequency bands with the same bandwidth, where all
9 messages in any group occupy non-adjacent frequency bands; combining the
10 messages of each group; applying each combined group of messages to a separate
11 amplifier to amplify each combined group of messages; and separating each amplified
12 group of messages into separate messages.

1 5. (Original) An article as claimed in claim 4, wherein the instructions when
2 executed further transmit each separated message to a respective receiving station.

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1 6. (Original) An article, comprising a storage medium having instructions
2 stored thereon, the instructions when executed communicating a plurality of messages
3 from an originating station, through a relaying station, to a plurality of receiving stations,
4 the instructions communicating the messages by transmitting the plurality of messages
5 from the originating station to the relaying station in a signal with frequencies within a
6 frequency band having a bandwidth B, with each message having frequencies within a
7 unique frequency band, where the frequency bands of the plurality of messages occupy
8 the bandwidth B, and where messages with adjacent frequency bands may have
9 different bandwidths; and at the relaying station separating the messages into groups of
10 messages having the same bandwidth, where all messages in any group occupy non-
11 adjacent frequency bands; combining the messages of each group; applying each
12 combined group of messages to a separate amplifier to amplify each combined group of
13 messages; separating each amplified group of messages into separate messages; and
14 transmitting each separated message to a respective receiving station.

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1 7. (Original) A apparatus for processing a signal with frequencies within a
2 frequency band having a bandwidth B, the signal including a plurality of messages,
3 each message having frequencies within a unique frequency band, where the frequency
4 bands of the plurality of messages occupy the bandwidth B, and where messages with
5 adjacent frequency bands may have different bandwidths, said apparatus comprising:

6 an antenna to receive the signal;

7 a first demultiplexor to separate the messages;

8 a filter unit to filter and group the separated messages into groups of
9 messages having the same bandwidth, where all messages in a group occupy non-
10 adjacent frequency bands;

11 a combining circuit to combine the messages of each group;

12 an amplifier for each group of messages to amplify each combined group
13 of messages; and

14 a second demultiplexor to separate each amplified group of messages into
15 separate messages.

1 8. (Original) An apparatus as claimed in claim 7, wherein the amplifier
2 comprises a traveling wave tube amplifier.

1 9. (Original) An apparatus as claimed in claim 7, further comprising a
2 transmitting antenna to transmit the separated messages.

1 10. (Original) An apparatus as claimed in claim 7, comprising an earth-
2 orbiting satellite.

1 11. (Original) A communication system, comprising:

2 an originating station to transmit a signal including a plurality of messages,
3 the signal having frequencies within a frequency band having a bandwidth B, with each
4 message having frequencies within a unique frequency band, where the frequency
5 bands of the plurality of messages occupy the bandwidth B and where messages with
6 adjacent frequency bands may have different bandwidths;

7 a plurality of receiving stations to receive the plurality of messages; and

8 a relaying station including an antenna to receive the signal, a first
9 demultiplexor to separate the messages, a filter unit to filter and group the separated
10 messages into groups of messages having the same bandwidth, where all messages in
11 any group occupy non-adjacent frequency bands, a combining circuit to combine the
12 messages of each group, an amplifier for each group of messages to amplify each
13 combined group of messages, a second demultiplexor to separate each amplified group
14 of messages into separate messages, and means for transmitting the separated
15 messages to their respective receiving stations.

1 12. (Original) An apparatus as claimed in claim 11, wherein the amplifier
2 comprises a traveling wave tube amplifier.

1 13. (Original) A communication system as claimed in claim 11, wherein said
2 relaying station comprises an earth-orbiting satellite.

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